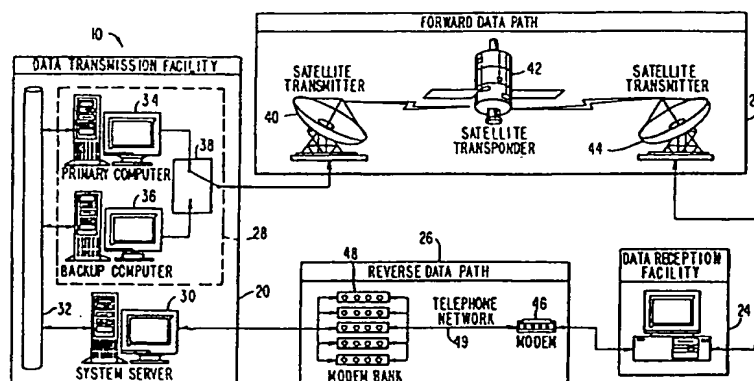




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(21) International Application Number: PCT/US98/14435 (22) International Filing Date: 15 July 1998 (15.07.98) (30) Priority Data: 08/905,452 1 August 1997 (01.08.97) US (71) Applicant: PREVUE INTERNATIONAL, INC. [US/US]; 7140 South Lewis Avenue, Tulsa, OK 74136 (US). (72) Inventors: BLACKWELL, Bruce, A.; 1801 S. Butternut Avenue, Broken Arrow, OK 74012 (US). BOYER, Franklin, E.; 191 Lake Shore Drive, Cleveland, OK 74020 (US). DEMERS, Timothy, B.; 7724 South Hudson Avenue, Tulsa, OK 74136 (US). (74) Agent: TREYZ, G., Victor; Fish & Neave, 1251 Avenue of the Americas, New York, NY 10020 (US).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report.

(54) Title: SYSTEM AND METHOD FOR TRANSMITTING AND RECEIVING DATA



(57) Abstract

The present invention provides a system and method for transmitting and receiving data that can transmit data over a plurality of data paths simultaneously and that provides a plurality of transmission queues which enable data transmissions to be continuously prioritized and which do not cause bottlenecking of data. In the preferred embodiments, the present invention comprises a data transmission facility, at least one forward data path, at least one data reception facility, and at least one reverse data path. Data is transmitted in response to a request to transmit data which may be locally generated at the data transmission facility, or may be remotely generated at any of the data reception facilities and transmitted to the data transmission facility through the reverse data path. The requested data is then transmitted from the data transmission facility through at least one forward data path to at least one data reception facility. Data is transmitted in the form of at least one header packet and at least one data packet for each data file. In the event that errors are detected in this transmission of data, retransmissions of the corrupted data may then be requested by any of the data reception facilities through the reverse data path. The transmitted data is finally received by at least one data reception facility, where a copy of the requested data file is recovered and the data is used as desired.

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WHAT IS CLAIMED IS:

1. A method for transmitting data from a data transmission facility to a data reception facility that reduces bottlenecking of the data, the method comprising:

placing a first portion of the data in a first transmission queue based upon a first priority associated with said first portion of the data and said first transmission queue;

placing a second portion of the data in a second transmission queue based upon a second priority associated with said second portion of the data and said second transmission queue; and

transmitting said first portion of the data from said first transmission queue and said second portion of the data from said second transmission queue, such that a fixed output ratio is maintained between said first transmission queue and said second transmission queue.

2. A method for transmitting a file header packet and a file data packet from a data transmission facility to a data reception facility, the method comprising:

selecting from a plurality of queues, each of which has a priority rating, a queue in which to queue the file header packet and the file data packet, based upon said priority rating and a transmission priority that is associated with the file header packet and the file data packet;

queuing the file header packet and the file data packet in said selected queue;

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selecting from a plurality of forward data paths, a first forward data path and a second forward data path on which to transmit the file header packet and the file data packet;

transmitting the file header packet on said first forward data path; and

transmitting the file data packet on said second forward data path.

3. A method for transmitting a file header packet and a file data packet from a data transmission facility to a data reception facility, the method comprising:

selecting from a plurality of forward data paths, a first forward data path and a second forward data path on which to transmit the file header packet and the file data packet;

transmitting the file header packet on said first forward data path; and

transmitting both the file header packet and the file data packet on said second forward data path.

4. A method of designating as a dynamic group a plurality of data reception facilities, each of which is to receive a single file data packet, the method comprising:

generating a plurality of file header packets, each of which is associated with the single file data packet and each of which identifies a different one of the plurality of data reception facilities; and

transmitting said plurality of file header packets to the plurality of data reception facilities.

5. A method of designating as a dynamic group a plurality of data reception facilities, each of which is to receive a single file data packet, the method comprising:

generating a plurality of file header packets, each of which is associated with the single file data packet and each of which identifies a different one of the plurality of data reception facilities; and

transmitting each of said plurality of file header packets to at least a one of the plurality of data reception facilities that is identified by said each of said plurality of file header packets.

6. A method of requesting transmission of replacement data to replace original data from a data transmission facility, the method comprising:

receiving from the data transmission facility through a first data path, at least a portion of the original data;

detecting an error condition based upon a characteristic of said at least a portion of the original data; and

transmitting to the data transmission facility through a second data path, a request for transmission of the replacement data.

7. The method of claim 6, the method further comprising:

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waiting prior to transmitting said request for a random period of time.

8. The method of claim 6, the method further comprising:

waiting prior to transmitting said request for a predetermined period of time.

9. The method of claim 6, the method further comprising:

waiting prior to transmitting said request until a predetermined time of day.

10. A method of transmitting at least one first data packet that is associated with a first data file and at least one second data packet that is associated with a second data file, the method comprising:

selecting a first packet length for each of the at least one first data packet;

selecting a second packet length for each of the at least one second data packet;

transmitting said each of the at least one first data packet with said first packet length; and

transmitting said each of the at least one second data packet with said second packet length.

11. The method of claim 10, wherein said selecting said first packet length comprises selecting said first packet length based upon a size of the first data file.

12. The method of claim 10, wherein said selecting said first packet length comprises selecting said first packet length based upon whether the first data file has been compressed.

13. The method of claim 10, wherein said selecting said first packet length comprises selecting said first packet length based upon whether the first data file has been subjected to forward error correction.

14. The method of claim 10, wherein said transmitting transmits said each of the at least one first data packet through a first data path and wherein said selecting said first packet length comprises selecting said first packet length based upon a characteristic of said first data path.

15. A method for checking whether a data file has been received without error after transmission from a data transmission facility to a data reception facility, the method comprising:

generating a manifest that comprises information regarding the data file at the data transmission facility;

transmitting said manifest from the data transmission facility to the data reception facility;

receiving said manifest at the data reception facility; and

checking whether the data file was received without error based upon said information comprised in said manifest.

16. The method of claim 15, further comprising requesting a retransmission of at least a portion of the data file if the data file was not received without error.

17. The method of claim 15, wherein said information comprises a command associated with the data file and the method further comprises performing said command if the data file was received without error.

18. The method of claim 15, wherein said information comprises a CRC code and said checking comprises determining whether the data file corresponds to said CRC code.

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